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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,879	04/09/2004	Sung-Sik Wang	251395US2	9268

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ZUBAJLO, JENNIFER L

ART UNIT	PAPER NUMBER
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2629

NOTIFICATION DATE	DELIVERY MODE
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08/03/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/820,879	Applicant(s) WANG, SUNG-SIK	
	Examiner Jennifer Zubajlo	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/5/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-11, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-11, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-11 & 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (fig.1, Pages 1-3) in view of Kwon (Korean 1020030094437).

As to claims 7-11 & 16-17, Applicant's Admitted Prior Art (fig.1) discloses applicant claimed invention except global purpose input/output pins, simultaneously transmitting the bit data and the color display data and the color display data being 18 bit.

Applicant's Admitted Prior Art doesn't teach the use of GPIO pins for transmitting data.

However, the patent of Kwon is cited to teach that it is well known for a LDC display driver to simultaneously transmit the bit data and the color display data (see Abstract) and also teaches the use of global purpose input/output (GPIO) pins for transmitting data (see translation page 4 lines 19-24 & page 5 lines 1-9).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the method of

simultaneously transmitting the bit data and the color display data and the use of GPIO pins as taught by Kwon into the LCD driver device of Applicant's Admitted Prior Art because this will allow the display to have a faster image display system.

As to color display data being 18 bits, one can pick and choose the number of bit to use for color display data.

3. Claims 7-11 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dae Heon Kwon (Pub. No.: 1020030094437 A) in view of Yoshiharu Hashimoto (Pub. No.: US 2006/0061532).

As to claims 7-11 and 16-17, Kwon teaches a mobile communication terminal with a main processor including a plurality of data pins and global purpose input/output (GPIO) pins, transmitting and separating 18 bits of data to the display simultaneously wherein the data is bit-shifted (see Abstract, figure1, and translation page 4 lines 19-24 & page 5 lines 1-9). However, any number of bits and pins could be used. This is just an engineering choice of design. Also note that it is known that GPIO devices provide a set of IO ports, which can be configured for either input or output.

Kwon doesn't teach transmitting predetermined bits of color display data to sequentially drive a liquid crystal display (LCD) device.

Hashimoto teaches transmitting predetermined bits of color display data to sequentially drive (on a dot-by-dot basis) a liquid crystal display (LCD) device (see [0003], [0006], [0007], and [0029]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission of predetermined bits of color

display data to sequentially drive a liquid crystal display (LCD) device taught by Hashimoto into the mobile communication terminal with a main processor including a plurality of data pins and global purpose input/output (GPIO) pins, transmitting and separating 18 bits of data to the display simultaneously wherein the data is bit-shifted taught by Kwon because it is well known that GPIO chips turn out to be a cheaper solution than using a microcontroller for common bus protocols and predetermined RGB data is one of many ways to drive a display device.

Note: References cited include just some examples that Examiner feels best explain the prior art rejection. However, the entire references teach the scope of the claims in more detail. Examiner recommends that Applicant read the full disclosures.

Response to Arguments

Applicant's arguments filed 7/5/2007 have been fully considered but they are not persuasive.

Claims 1-6, 12-15, and 18-19 have been canceled.

Applicant argues that Kwon and Hashimoto do not individually or in combination disclose transmitting a part of the display data to an LCD driver through a GPIO pin. Examiner finds this argument not persuasive because Kwon discloses a two-way signal line used for data transmission (see translation page 4 lines 19-24 & page 5 lines 1-9) and it is well known in the art that GPIO devices provide a set of IO ports, which can be configured for either input or output (2-way transmission).

Applicant further argues that the feature of a GPIO pin and transmission of data through a GPIO pin is not disclosed in Applicant's figure 1 or on pages 1-3 of the specification. Examiner agrees with this statement and never stated in this rejection or in the previous rejection that Applicant's Admitted Prior Art discloses the GPIO pin. Kwon discloses a two-way signal line used for data transmission (see translation page 4 lines 19-24 & page 5 lines 1-9) and it is well known in the art that GPIO devices provide a set of IO ports, which can be configured for either input or output (2-way transmission).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Zubajlo whose telephone number is (571) 270-1551. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JZ
7/26/2007


AMARE MENGISTU
SUPERVISORY PATENT EXAMINER